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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/784,171

02/16/2001

Norio Kimura

2001-0163A

1530

513

7590

02/28/2003

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EXAMINER

ROSE, ROBERT A

ART UNIT

PAPER NUMBER

3723

DATE MAILED: 02/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/784,171

Applicant(s)
Kimura et al

Examiner
Robert Rose

Art Unit
3723



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Nov 22, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, and 5 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 6) ☐ Other:

Art Unit: 3723

DETAILED ACTION

1. Claims 3, and 6 have been canceled.
2. Receipt is acknowledged of Applicant's Prior Art Statement, filed November 22, 2002.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al(US 5672091) in view of Stephan(Australian No. 245213) and further in view of Kanzawa et al. Takahashi et al discloses an optical endpoint detection device for a cmp machine comprising an optical measuring device located adjacent an outer edge of the polishing pad to detect the surface of an overhanging wafer. Note optical endpoint detection device (3)(4) adjacent polishing table(1) for detecting the state of the wafer(F) held by top ring(2), without removal of the wafer from the table. While the polishing table lacks a notch in it's outer surface to allow light to pass through for observation of the work, such structure is known in the optical detection art as evidenced by Stephan. To provide one or more such notches in the outer periphery of the polishing table in Takahashi et al to locate the optical endpoint detection device as close as possible to the polishing table to save space, while still allowing detection of the state of the workpiece without removal of the workpiece would have been obvious in view of Stephan. With regard to claim 4 the exposure area of the wafer during measuring is deemed to constitute

Art Unit: 3723

no more than an obvious matter of design choice in the absence of a showing of criticality in the use of "not more than 40%" exposure. Kanzawa et al disclose a polishing device for polishing wafers comprising a top ring having a universal joint which is oscillated across the pad in a swinging motion. To provide a universal joint in the top ring connection of Takahashi et al and mount the top ring on a swingable arm to oscillate the wafer during polishing to provide a more even polishing action would have been obvious in view of Kanzawa et al.

5. Applicant's arguments filed November 22, 2002 have been fully considered but they are not persuasive. Takahashi et al hang the wafer over the edge of the pad to expose a portion of it's surface to allow optical measurement of it's surface by reflected light to determine the polishing endpoint. While a notch is not disclosed for this purpose, Stephan teaches such a notch in a rotary polishing tool for optical assessment of the state of the work. To provide one or more such notches in the polishing table of Takahashi et al for this reason would have been obvious in view of Stephan. Applicant's new limitation of the top ring having a universal joint, and of the top ring being swingable between an inner and outer area of the polishing table is taught by Kanzawa et al.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 3723

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication should be directed to Robert Rose at telephone number (703) 308-1360.

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February 4, 2003.

ROBERT A. ROSE
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